

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
Kanjji OHYAMA ) Confirmation No.: 1480  
Application No.: 10/584,082 ) Group Art Unit: Unassigned  
Filed: June 22, 2006 ) Examiner: Unassigned  
For: MARCHANTIALES-DERIVED UNSATURATED FATTY ACID SYNTHETASE GENES  
AND USE OF THE SAME )

Commissioner for Patents  
U.S. Patent and Trademark Office  
Customer Window Mail Stop: ☐ New Application ☒ Amendment ☐ AF ☐ Issue Fee  
Alexandria, VA 22314

Sir:

**INFORMATION DISCLOSURE STATEMENT (IDS)**

☒ **Under 37 C.F.R. § 1.97(b):** Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), Applicant brings to the attention of the Examiner the documents listed on the attached PTO Form 1449. To the undersigned's knowledge, this IDS is being filed before the mailing date of a first Office Action on the merits, before the mailing date of a first Office Action on the merits after filing an RCE under § 1.114, or within three months of the application filing date.

☐ **Under 37 C.F.R. § 1.97(c):** Pursuant to 37 C.F.R. §§ 1.56 and 1.97(c), Applicant brings to the attention of the Examiner the documents listed on the attached PTO Form 1449. This IDS is being filed after the events recited in § 1.97(b) but, to the undersigned's knowledge, before the mailing date of a Final Office Action, a Notice of Allowance, or another action that closes prosecution in the application.

- ☐ The fee of \$180.00 set forth in § 1.17(p) is included herein; or
- ☐ Applicant submits that each item of information contained in this IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS.

☐ **Under 37 C.F.R. § 1.97(d):** Pursuant to 37 C.F.R. §§ 1.56 and 1.97(d), Applicant brings to the attention of the Examiner the documents listed on the attached PTO Form 1449. This IDS is being filed after the events recited in § 1.97(c) but before payment of the issue fee.

- ☐ The fee of \$180.00 set forth in § 1.17(p) is included herein; and
- ☐ Applicant submits that each item of information contained in this IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS.

☐ **Under 37 C.F.R. § 1.97(i):** Pursuant to 37 C.F.R. §§ 1.56 and 1.97(i), Applicant brings to the attention of the Examiner the documents listed on the attached PTO Form 1449. This IDS is being filed after the events recited in § 1.97(d). Applicant requests that the IDS be placed in the file.

☐ A search report or other listing of documents from a counterpart, related, or other application dated \_\_\_\_\_ and having documents cited thereon is attached for the Examiner's consideration. Any of these documents not previously cited, and any additional documents are listed on the PTO Form 1449.

☒ Applicant respectfully requests that the Examiner consider the listed documents and evidence that consideration by making appropriate notations on the attached form. As for any document listed on the accompanying PTO-1449 that is in a language other than English, relevance can be understood from an enclosed English abstract or at least partial translation or from mention in the specification or in a search report for a corresponding application.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that any of the listed documents are material or constitute "prior art." If it should be determined that any of the listed documents do not constitute "prior art" under United States law, Applicant reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

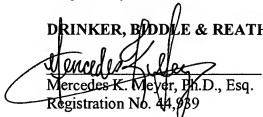
Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should any of the documents be applied against the claims of the present application.

Except for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this Application, including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required and including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

**DRINKER, BIDDLE & REATH LLP**

Dated: May 15, 2007

  
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| <b>INFORMATION DISCLOSURE CITATION</b> | Attorney Docket No.:<br>47236-0009 | Serial No.:<br>10/584,082     |
| (Use several sheets if necessary)      | Applicant<br>Kanji OHYAMA          | Page 2 of 4                   |
| PTO Form 1449                          | Filing Date:<br>June 22, 2006      | Group Art Unit:<br>Unassigned |

## U.S. PATENT DOCUMENTS


| *Examiner Initial | Document Number | Date | Name | Class | Sub Class | Filing Date |
|-------------------|-----------------|------|------|-------|-----------|-------------|
|                   |                 |      |      |       |           |             |

## FOREIGN PATENT DOCUMENTS

| Document Number | Date | Country | Class | Sub Class | Translation<br>YES NO |
|-----------------|------|---------|-------|-----------|-----------------------|
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## OTHER DOCUMENTS

(Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.)

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| /E.M./   | T. AKI et al., "Molecular Cloning and Functional Characterization of Rat $\Delta$ -6 Fatty Acid Desaturase," <i>Biochemical and Biophysical Research Communications</i> , 1999, Vol. 255, No. 3, pp. 575-579.  |
|  | H. CHO et al., "Cloning, Expression, and Nutritional Regulation of the Mammalian $\Delta$ -6 Desaturase," <i>The Journal of Biological Chemistry</i> , January 1, 1999, Vol. 274, No. 1, pp. 471-477.  |
|  | J. PARKER-BARNES et al., "Identification and characterization of an enzyme involved in the elongation of n-6 and n-3 polyunsaturated fatty acids," <i>PNAS</i> , July 18, 2000, Vol. 97, No. 15, pp. 8284-8289.  |
|  | F. BEAUDOIN et al., "Heterologous reconstitution in yeast of the polyunsaturated fatty acid biosynthetic pathway," <i>PNAS</i> , June 6, 2000, Vol. 97, No. 12, pp. 6421-6426.   |
|  | T. ZANK et al., "Cloning and functional characterisation of an enzyme involved in the elongation of $\Delta$ 6-polyunsaturated fatty acids from the moss <i>Physcomitrella patens</i> ," <i>The Plant Journal</i> , 2002, Vol. 31, No. 3, pp. 255-268.   |
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|  | D. JAMES, JR. et al., "Directed Tagging of the Arabidopsis <i>FATTY ACID ELONGATION1 (FAE1)</i> Gene with the Maize Transposon <i>Activator</i> ," <i>The Plant Cell</i> , March 1995, Vol. 7, pp. 309-319.  |
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|  | L. MICHAELSON et al., "Functional identification of a fatty acid $\Delta$ 5 desaturase gene from <i>Caenorhabditis elegans</i> ," <i>FEBS Letters</i> , 1998, Vol. 439, pp. 215-218.   |
|  | R. ZOLFAGHARI et al., "Fatty Acid $\Delta$ 5-Desaturase mRNA is Regulated by Dietary Vitamin A and Exogenous Retinoic Acid in Liver of Adult Rats <sup>1</sup> ," <i>Archives of Biochemistry and Biophysics</i> , July 1, 2001, Vol. 391, No. 1, pp. 8-15.                                      |
|  | H. CHO et al., "Cloning, Expression, and Fatty Acid Regulation of the Human $\Delta$ 5 Desaturase," <i>The Journal of Biological Chemistry</i> , December 24, 1999, Vol. 274, No. 52, pp. 37335-37339.   |

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|--|----------------------|-----------------|------------|
| Examiner   | /Elizabeth McElwain/ | Date Considered | 06/17/2010 |
| Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |                      |                 |            |

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|--|----------------------|--|------|-------------------------------|-------|--------------|-----------------------|
| <b>INFORMATION DISCLOSURE CITATION</b><br>(Use several sheets if necessary)  |                      | Attorney Docket No.:<br>47236-0009   |      | Serial No.:<br>10/584,082     |       |              |                       |
| PTO Form 1449  |                      | Applicant<br>Kanji OHYAMA  |      | Page 3 of 4                   |       |              |                       |
|  |                      | Filing Date:<br>June 22, 2006  |      | Group Art Unit:<br>Unassigned |       |              |                       |
| <b>U.S. PATENT DOCUMENTS</b>   |                      |  |      |                               |       |              |                       |
| *Examiner<br>Initial   |                      | Document<br>Number   | Date | Name                          | Class | Sub<br>Class | Filing Date           |
|  |                      |  |      |                               |       |              |                       |
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| <b>FOREIGN PATENT DOCUMENTS</b>  |                      |  |      |                               |       |              |                       |
|  |                      | Document<br>Number   | Date | Country                       | Class | Sub<br>Class | Translation<br>YES NO |
|  |                      |  |      |                               |       |              |                       |
|  |                      |  |      |                               |       |              |                       |
| <b>OTHER DOCUMENTS</b>   |                      |  |      |                               |       |              |                       |
| (Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.) |                      |  |      |                               |       |              |                       |
| /E.M./   |                      | F. DOMERGUE et al., "Acyl Carriers Used as Substrates by the Desaturases and Elongases Involved in Very Long-chain Polyunsaturated Fatty Acids Biosynthesis Reconstituted in Yeast," The Journal of Biological Chemistry, September 12, 2003, Vol. 278, No. 37, pp. 35115-35126. |      |                               |       |              |                       |
|  |                      | M. KAJIKAWA et al., "Functional Analysis of a $\beta$ -Ketoacyl-CoA Synthase Gene, <i>MpFAE2</i> , by Gene Silencing in the Liverwort <i>Marchantia polymorpha</i> L.," Biosci. Biotechnol. Biochem., 2003, Vol. 67, No. 3, pp. 605-612.   |      |                               |       |              |                       |
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|  |                      | L. ZHANG et al., "Gene Expression Profiles in Normal and Cancer Cells," Science, May 23, 1997, Vol. 276, pp. 1268-1272.  |      |                               |       |              |                       |
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| Examiner   | /Elizabeth Mcelwain/ |  |      | Date Considered               |       | 06/17/2010   |                       |
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